

REMARKS

Applicants thank the Examiner for review of the present application and note with appreciation the Examiner's indication that Claims 2, 5, 6, 10, and 11 contain patentable subject matter and would be allowed if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

The Office Action of July 12, 2005, rejects Claims 1, 3, 4, 7-9, 12, and 13 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,212,730 to Wheatley et al. (hereinafter "the Wheatley patent"). Claims 2, 5, 6, 10, and 11 are allowable but objected to as being dependent from a rejected base claim. Applicants have added Claims 14-25 to specifically claim additional aspects of the present invention related to using branched grammar for representing variations of pronunciations of sequences of multilingual phoneme symbols. Applicants provide the following remarks in response to the objection and rejections of the Office Action.

Rejections Under 35 U.S.C. § 103(a)

The Office Action of July 12, 2005, rejects Claims 1, 3, 5, 7-9, 12, and 13 under 35 U.S.C. § 103(a) as being unpatentable over the Wheatley patent. With regard to the added recitation of "branched grammar," the Office Action has broadly interpreted the term "branched grammar" as "a technique for capturing all pronunciations that are allowed in the set of language supported by the multilingual recognition system," and cites page 8, line 30 through page 9 line 3 of the specification for support.

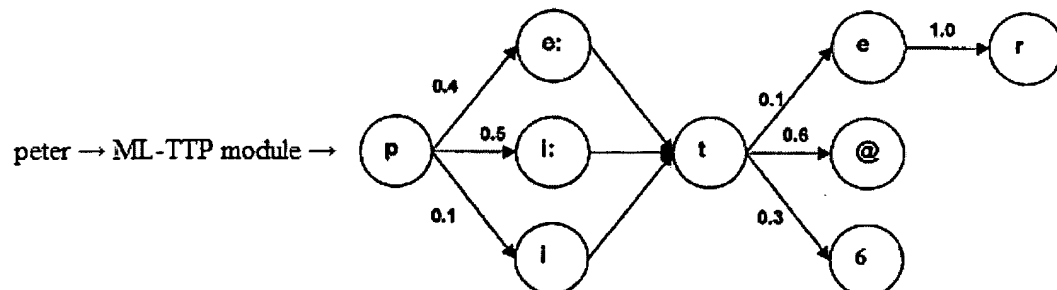
Applicants respectfully submit, however, that this interpretation of the term "branched grammar" is inconsistent with the specification and, further, that the term has been incorrectly applied in the rejection. Specifically, the stated definition in the Office Action does not define the term for what it is, but merely states a genus of the term as "a technique for capturing all pronunciations..." (emphasis added). While Applicants agree that "branched grammar" is "a technique for capturing all pronunciations..." as stated in the Office Action, Applicants point out that "branched grammar" is not merely any technique, but is a specific technique for capturing all pronunciations. Applicants point out that the claim language does not merely recite "a technique for capturing all pronunciations..." but recites using "branched grammar." Further, Applicants respectfully submit that the rejection has applied a genus including "branched grammar," rather than the specific recitation of "branched grammar." While other techniques may also capture all pronunciations, the claimed technique is limited to "branched grammar." As such, Applicants submit that the Wheatley patent does not teach or suggest the use of "branched grammar" as described further below.

Applicants submit that the specificity of the term “branched grammar” has been misinterpreted as a genus including “branched grammar.” As noted above, Applicants submit that “branched grammar” is a specific technique for capturing all pronunciations, i.e., the specific technique which is described in the specification. In that regard, the specification states at page 8, lines 30-32 that the “principle of branched grammar decoding in combination with a multilingual TTP module 34 is illustrated for the name “Peter” in fig. 5.” Figure 5 does not merely show any technique for capturing all pronunciations as eluded to in the Office Action at page 2, no. 2, para. 2, line 4. Rather, Figure 5 shows the specific technique of branched grammar which represents multiple sequences of multilingual phonemes, which can be used to determine various pronunciations, by utilizing single phoneme symbols for phoneme symbol commonalities in multiple sequences and branches to multiple phoneme symbols for phoneme symbol differences in the multiple sequences. By comparison, the Wheatley patent teaches that “[f]or each name..., the Boltzmann machine generates a phonetic feature sequence...,” that the “Boltzmann machine (13) will generate different phonetic sequences from the same input name text,” and that “the resulting phonetic feature sequences are compared, and the different sequences, representing different pronunciations, are selected (15)....” See U.S. Patent 5,212,730, col. 4, lines 17-36. The randomness of the Boltzmann machine of the Wheatley patent may not even generate *all* pronunciations, such as where a less likely sequence for a pronunciation is not generated. While the results of the technique of the Wheatley patent and using branched grammar are similar, the techniques are completely different. The following representations of the technique of the Wheatley patent and the branched grammar technique of the claimed invention are illustrative of the difference between the two techniques.

Example illustration of generation of phoneme sequences using the technique of the Wheatley patent, in which the text name “peter” is input 15 times to a Boltzmann machine:

peter → Boltzmann machine → p i: t @
peter → Boltzmann machine → p e: t @
peter → Boltzmann machine → p i: t e r
peter → Boltzmann machine → p i t @
peter → Boltzmann machine → p e: t e r
peter → Boltzmann machine → p i t 6
peter → Boltzmann machine → p e: t @ [duplicate not selected]
peter → Boltzmann machine → p i: t 6
peter → Boltzmann machine → p e: t e r [duplicate not selected]
peter → Boltzmann machine → p i t 6 [duplicate not selected]
peter → Boltzmann machine → p i: t e r [duplicate not selected]
peter → Boltzmann machine → p e: t 6
peter → Boltzmann machine → p i t @ [duplicate not selected]
peter → Boltzmann machine → p i: t 6 [duplicate not selected]
peter → Boltzmann machine → p e: t 6 [duplicate not selected]

Example illustration of generation of phoneme sequences using the branched grammar technique of the claimed invention, in which the text name "peter" is input one time to the ML-TTP module, also optionally shown with probability weightings for each branch:



The multiple sequences produced using a Boltzmann machine are represented by individual sequences, some of which may repeat and not be selected, and where some possibilities may not be present, e.g., "p i t e r." The Wheatley patent teaches generating individual sequences from the same input name text. The multiple sequences of the claimed invention are represented by a single branched grammar, not different individual sequences. Instead, the branched grammar has different phoneme symbols at one or more positions to represent variations of pronunciations. Branched grammar, *per se*, generates a complete and non-redundant set of multilingual phoneme symbol sequences which can be used to determine variations of pronunciations. While both techniques may capture all pronunciations (or nearly all pronunciations, such as in the case of a Boltzmann machine which misses at least one possible sequence), the techniques are completely different. Applicants submit that the technique of using a branched grammar is not defined by the result of capturing all pronunciations, but is defined by the manner in which the result is achieved, i.e., by using branched grammar decoding, not merely that using a branched grammar "allows for capturing all pronunciations that are allowed in the set of languages supported by the multilingual recognition system." *Accord* Pat. App. page 9, lines 1-3. Applicants submit that the Office Action applies the genus of techniques including branched grammar. The application of the genus ignores the specificity and meaning of the term branched grammar. The claim language specifically recites that a branched grammar technique is used, not merely any technique. Applicants also point out that the specification indicates that when using branched grammar, "different phonemes at each position can be weighted with probabilities as given by the multilingual TTP model." *See* Pat. App. page 9, lines 3-5. Applicants submit that the technique of the Wheatley patent does not allow for weighting of different phonemes at each position or suggest a technique with the ability for weighting of different phonemes at each position. Accordingly, the Wheatley patent does not teach or suggest using branched grammar as recited in Claim 1, and Applicants submit that Claim 1 is allowable in view of the references cited.

In view of the remarks presented above with respect to Claim 1, Applicants submit that dependent Claims 2 and 3 and newly added dependent Claims 14-25 are in condition for allowance for the reasons provided with respect to Claim 1. Further, Applicants submit that independent Claims 4 and 9, which recite using branched grammar, and dependent Claims 5-8 and 10-12 are in condition for allowance for the reasons provided with respect to Claim 1. Applicants submit that the remarks presented above overcome the § 103(a) rejection of the Office Action of July 12, 2005.

Conclusion

In view of the remarks presented above, Applicants submit that all of the pending Claims 1-25 of the present application are in condition for allowance. Accordingly, entry of the amendments and allowance of the application are respectfully requested. In order to expedite the examination of the present application, the Examiner is encouraged to contact Applicants' undersigned attorney in order to resolve any remaining issues.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper, such as the fees for a request for an extension of time. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

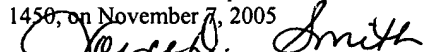


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